

CLAIMS

What is claimed is:

1. A plated magnetic film comprising Co and Fe, wherein the plated magnetic film comprises a columnar crystal extending in a film thickness direction.
2. The magnetic film according to Claim 1, wherein a plurality of the columnar crystals are provided side by side in the film surface direction with grain boundaries extending in the film thickness direction therebetween.
3. The magnetic film according to Claim 1, wherein a compositional ratio of Fe is 50% to 85% by weight.
4. The magnetic film according to Claim 1, wherein a compositional ratio of Fe is 50% to 81.5% by weight.
5. The magnetic film according to Claim 1, wherein a compositional ratio of the Fe is 60% to 72% by weight.
6. The magnetic film according to Claim 1, wherein an average crystal particle diameter of the plated magnetic film is 200 angstroms or less.
7. The magnetic film according to Claim 1, wherein a center line average roughness Ra of a film surface of the plated magnetic film is 2.5 nm or less.
8. A thin film magnetic head comprising a lower core layer, an upper core layer and a magnetic pole portion located between the lower core layer and the upper core layer, wherein the magnetic pole portion has a width dimension in a track-width direction less than that of the lower core layer and the upper core layer,

wherein the magnetic pole portion comprises one of a lower magnetic pole layer succeeding the lower core layer, a) an upper magnetic pole layer succeeding the upper core layer and a gap layer located between the lower magnetic pole layer and the upper magnetic pole layer, or b) an upper magnetic pole layer succeeding the upper core layer and a gap layer located between the upper magnetic pole layer and the lower core layer,

wherein one or both of the upper magnetic pole layer and the lower magnetic pole layer comprises a plated film comprising Co and Fe, and wherein the plated film further comprises a columnar crystal extending in a film thickness direction.